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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. | | |
|--------------------|-------------|----------------------|---------------------|------------------|--|--|
| 10/573,431 | 03/24/2006 | Kim Lui So | SO-7 | 1987 | | |
| 39705 | 7590 | 05/11/2009 | EXAMINER | | | |
| LOREN G. HELMREICH | | | WU, IVES J | | | |
| 5851 San Felipe | | | ART UNIT | | | |
| SUITE 975 | | | PAPER NUMBER | | | |
| HOUSTON, TX 77057 | | | 1797 | | | |
| MAIL DATE | | DELIVERY MODE | | | | |
| 05/11/2009 | | PAPER | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/573,431 | SO, KIM LUI | |
| | Examiner | Art Unit | |
| | IVES WU | 1797 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 24 March 2006.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 30-44 is/are pending in the application.
- 4a) Of the above claim(s) 45-49 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 30-44 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/24/2006</u> . | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Election/Restrictions

- (1). Restriction to one of the following inventions is required under 35 U.S.C. 121:
- I. **Claims 30-44**, drawn to self cleaning filter assembly, classified in class 96, subclass 233.
 - II. **Claims 45-49**, drawn to circulation system, classified in class 137, subclass 454.4.

The inventions are distinct, each from the other because of the following reasons:

Inventions Group I and Group II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different designs, modes of operation, and effects (MPEP § 802.01 and § 806.06). In the instant case, the different inventions Group II can be used for a self-cleaning filter Assembly other than Group I.

Restriction for examination purposes as indicated is proper because all these inventions listed in this action are independent or distinct for the reasons given above and there would be a serious search and examination burden if restriction were not required because one or more of the following reasons apply:

- (a) the inventions have acquired a separate status in the art in view of their different classification;
- (b) the inventions have acquired a separate status in the art due to their recognized divergent subject matter;
- (c) the inventions require a different field of search (for example, searching different classes/subclasses or electronic resources, or employing different search queries);
- (d) the prior art applicable to one invention would not likely be applicable to another invention;
- (e) the inventions are likely to raise different non-prior art issues under 35 U.S.C. 101 and/or 35 U.S.C. 112, first paragraph.

Applicant is advised that the reply to this requirement to be complete must include

(i) an election of a invention to be examined even though the requirement may be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse. Traversal must be presented at the time of election in order to be considered timely. Failure to timely traverse the requirement will result in the loss of right to petition under 37 CFR 1.144. If claims are added after the election, applicant must indicate which of these claims are readable on the elected invention.

If claims are added after the election, applicant must indicate which of these claims are readable upon the elected invention.

Should applicant traverse on the ground that the inventions are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

During a telephone conversation with *Attorney Loren Helmreich* on April 9, 2009 a provisional election was made without traverse to prosecute the invention of Group I, claims 30-44. Affirmation of this election must be made by applicant in replying to this Office action. Claims 45-49 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

(2). **Claims 39-40** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 39, it recites: as claimed in claim 1. However, claim 1 is cancelled. Therefore, it renders indefinite and rejected including its dependent claim 40.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

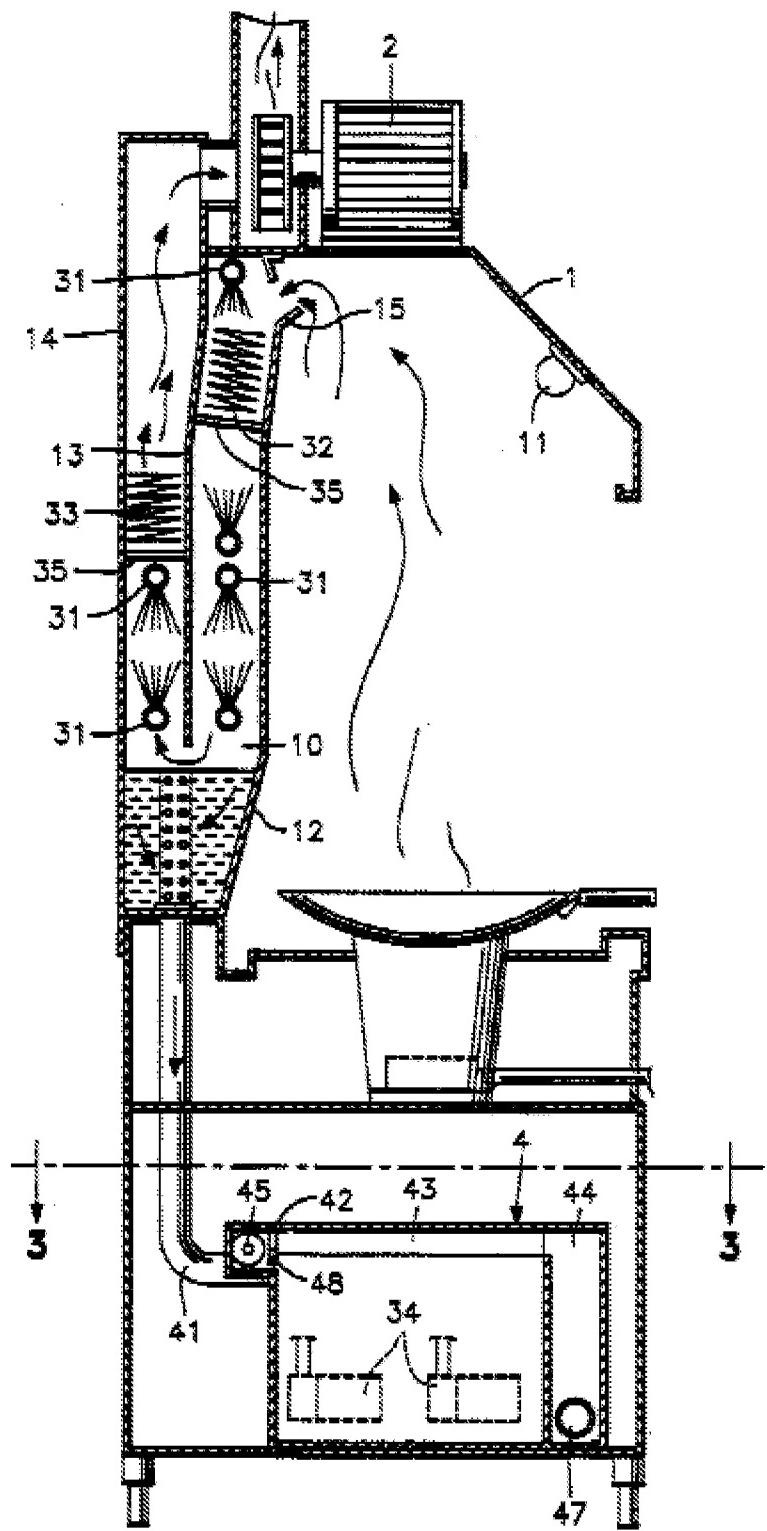
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

- (3). **Claims 30, 34-35, 37, 39, 41, 43-44** are rejected under 35 U.S.C. 102(b) as being anticipated by Hsu (US 5359990A).

As to a duct for positioning about the path of an air flow, the duct housing a 1st filter and 2nd filter in a self cleaning filter assembly for use in an exhaust system in independent claim 1, Hsu (US 5359990A) disclose oily smoke treating and exhausting device (Title). As shown in the Figure below, U-shaped passage reads on the duct including filter 32 and 33.

FIG. 2



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As to a plurality of spray outlets for dispersion of a liquid within the duct, wherein the plurality of spray outlets forming droplets of the liquid sized for combining with a contaminant to form combined droplets in the air flow, and where at least one of the 1st filter and 2nd filter capturing the combined droplets in **independent claim 30**, Hsu (US 5359990A) discloses the two passageways 10, 10 – the 1st one and 2nd one, include a plurality of spray nozzles 31 spray out clean water pumped by water pump 34 from the bottom of a separating tank 43 for cleaning the oily smoke passing through the 1st and 2nd passageways 10, 10 and forcing oil mixed in smoke to mixed with water and drop down owing to its large specific gravity into the separating tank 43 (Col. 2, line 24-33). An upper end of the 2nd passageway 10 is connected with the fan 2, which blows out oily smoke produced, after being showered with water sprayed out of spray nozzles 31, then filtered through the filter plates 32,33 (Col. 2, line 15-19).

As to a barrier positioned adjacent the duct to prevent the liquid from dripping from at least one of 1st filter and 2nd filter and out from the duct in **independent claim 30**, Hsu (US 5359990) discloses an inlet opening 15 to be provided at top of the front vertical plate 12 for oily smoke to flow into the 1st passageway 10 guided by the housing 1, and the opening being at the top also prevents water in the filter plates 3,3 from flowing out. The bent shape portion of 15 reads on the barrier as claimed.

As to self cleaning filter assembly in **independent claim 30**, the disclosure of reference meets the requirements of the present claims both in terms of the structures and their elements. It is reasonable to presume that the device of reference would fulfill the same utility as self cleaning filter assembly as presently claimed in light of its design similarities. The burden is shifted to Applicant to establish that the self cleaning filter assembly is not the same as or obvious as that set forth by the reference.

As to barrier including at least one chamber for the containment of the liquid in **claim 34**, as is shown in the Figure above the 1st passageway 10 and its bottom reads on the limitations as claimed.

As to a conduit for fluid drainage of liquid from at least one chamber in **claim 35**, as is shown in Figure above, the 1st passageway 10 also reads on the conduit for drainage.

As to each spray outlet being selected from a group of outlets consisting of a fan jet spray and a nozzle in **claim 37**, Hsu (US 5359990A) discloses spray nozzles 31 (Col. 2, line 38).

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As to plurality of spray outlets being on an inlet side of one of the 1st filter and 2nd filter in **claim 39**, as shown in Figures 1 and 2, the spray line 31 with plurality of nozzles which read on the limitations of instant claim.

As to plurality of spray outlets being located between the 1st filter and 2nd filter in **claim 41**, as shown in the Figure above, it includes the features as claimed.

As to plurality of spray outlets being located within the duct in **claim 43**, as shown in the Figure above, it reads on the limitations as claimed.

As to barrier comprising at least one chamber with at least one baffle therein in **claim 44**, as shown in Figure above, the 1st duct 10 and bent baffle art entrance would read on the limitations as claimed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

(4). **Claims 31-33** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu (US 5359990A) in view of Gustavsson et al (US 4227903).

As to barrier comprising a plurality of louvers that create openings when the exhaust system is operational in **claim 31**, barrier including baffles to retard the air flow in **claim 33**, Hsu (US 5259990A) discloses the inlet opening 15 as shown in the Figure above. Hsu **does not teach** a plurality of louvers to create openings when the exhaust system is operational.

However, Gustavsson et al (US 4227903) **teach** filter cell apparatus. The grating 12 can be made up from lamels 13 and some kind of frame, or can consist of a louvre-punched plate where the **louvers form** the lamels or **baffles** 13 (Col. 2, line 19-21).

The advantage of grating is to give a strong deflection to the raw gas flow, thereby forming a lamella deflection separator (Col. 1, line 66-67).

Therefore, it would have been obvious at time of the invention to modify the inlet of Hsu to have louvre-type grating in order to attain the advantage cited in preceding paragraph.

As to barrier being slid able into the duct to create an opening when the exhaust system is operational in **claim 32**, since the louvre can be single louvre which reads on limitations as claimed.

(5). **Claims 36, 40 and 42** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu (US 5359990A).

As to each spray outlet dispersing the liquid in an arc of between sixty degrees and one hundred eight degrees relative to a central axis of the spray outlet in **claim 36**, in absence of showing criticality of the records, the optimization of area spanned by spraying liquid to be sixty to one hundred eight degrees in a known process render *prima facie* obvious within one of ordinary skills in the art. *In re Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980).

As to plurality of spray outlets being located at each edge of one of the 1st and 2nd filter in **claim 40**; plurality of spray outlets being located on opposed corners of one of the 1st filter and 2nd filter in **claim 42**, it would be obvious to have spray outlets being located on opposed corner of filters because rearrangements of parts. *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975).

(6). **Claim 38** is rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu (US 5359990A) in view of McDonald (US 7211551B2).

As to liquid including water and a degreaser in a ratio in the range of from 1:10 to 1:50 in **claim 38**, Hsu (US 5359990A) discloses water spray. Hsu **does not teach** water and a degreaser in a ratio in the range of from 1:10 to 1:50 as claimed.

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However, McDonald (US 7211551B2) **teaches** universal cleaner that cleans tough oil, grease and rubber grime and that is compatible with many surfaces including plastics (Title). The cleaning composition includes an oil solubilizing amount of a degreaser, a rubber solubilizing amount of a rubber solvent, and a polar, organic diluent (Abstract, line 7-9). Preferred compositions contain less than 5%, preferably less than 1% and more preferably less than 0.5% water (Col. 7, line 58-60). Cleaning compositions are preferably water-restricted. It has been found that the presence of too much water not only may have a destabilizing effect upon the cleaning composition itself, but also may tend to impair cleaning performance (Col. 7, line 49-53).

The advantage of using universal cleaner is to have tremendous cleaning power, yet to be compatible with many surfaces (Abstract, line 1-2).

Therefore, it would have been obvious at time of the invention to replace the water of Hsu by the universal cleaner of McDonald for the oily smoke treatment disclosed by Hsu because of the advantage cited in preceding paragraph.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to IVES WU whose telephone number is (571)272-4245. The examiner can normally be reached on 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Examiner: Ives Wu
Art Unit: 1797
Date: May 5, 2009

/DUANE SMITH/
Supervisory Patent Examiner, Art Unit 1797